CLAIMS

- 1. A polyaddition product of amine compound (a₁) having a polyoxyalkylene chain or chains and monoepoxysilane (a₂), which has a weight-average molecular weight within a range of 250 10,000.
- 2. A polyaddition product as set forth in Claim 1, in which the amine compound (a_1) having a polyoxyalkylene chain or chains is selected from the group consisting of the compounds represented by the following formulae (1), (2), (3) and (4);

$$R_0(CH_2)_a N(CH_2)_b NH_2$$

 $(R_1O)_n - (R_2O)_m R_3$ (1)

(in which R_0 stands for NH_2 or OH; R_1 and R_2 each stands for C_2H_4 or C_3H_6 ; R_3 stands for H, C_2H_5 or C_3H_7 ; a, b and n each is an integer of at least 1; and m is an integer not less than 0);

$$H_2N(CH_2)_aO(R_1O)_m-(R_2O)_mR_3$$
 (2)

(in which R_1 and R_2 each stands for C_2H_4 or C_3H_6 ; R_3 stands for H, C_2H_5 or C_3H_7 , a and n each is an integer of at least 1; and m is an integer not less than 0); and

$$H_2NCHCH_2(R_1O)_{\overline{n}} (R_2O)_{\overline{m}}NH_2$$
 (3)

(in which R_1 and R_2 each stands for C_2H_4 or C_3H_6 , n is an integer of at least 1, and m is an integer not less than 0);

$$\begin{array}{c} (R_{1}O)_{n} - (R_{2}O)_{m}R_{3} \\ | \\ O(CH_{2})_{a}N(CH_{2})_{b}NH_{2} \\ | \\ (R_{1}O)_{n} - (R_{2}O)_{m}R_{3} \end{array} \tag{4}$$

(in which R₁ and R₂ each stands for C₂H₄ or C₃H₆, R₃ stands for H, C₂H₅ or C₃H₇, a, b and n each is an integer of at least 1, and m is an integer not less than 0).

3. A polyaddition product as set forth in Claim 1, in which the monoepoxysilane (a₂) is selected from the group consisting of the compounds represented by the following formulae (5) – (11):

$$H_{2}C$$
— CH — CH_{2} — O — $C_{3}H_{6}$ — Si — OCH_{3}
OCH₃
(5)

$$H_{2}C$$
— CH — CH_{2} — O — $C_{3}H_{6}$ — Si — OCH_{3} (6)

$$H_{2}C - CH - CH_{2} - O - C_{3}H_{6} - Si - OC_{2}H_{5}$$
 (7)

$$H_{2}C - CH - CH_{2} - O - C_{3}H_{6} - Si - OCCH_{3}$$
 $OCCH_{3}$
 $OCCH_{3}$
 $OCCH_{3}$
 $OCCH_{3}$

$$\begin{array}{c} \text{OCH}_3 \\ \text{---} \text{C}_2\text{H}_4 \\ \text{---} \text{Si} \\ \text{---} \text{OCH}_3 \\ \text{OCH}_3 \end{array}$$

$$\begin{array}{c} CH_3 \\ C_2H_4 - Si - OCH_3 \\ COCH_3 \end{array}$$
 (10)

and

- 4. A polyaddition product as set forth in Claim 1, which is obtained by subjecting the amine compound (a_1) having a polyoxyalkylene chain or chains and the monoepoxysilane (a_2) to a ring-opening addition reaction, at a ratio of 0.5-2 moles of the monoepoxysilane per mole of amino groups of the amine compound.
- 5. A polyaddition product as set forth in Claim 1, which has a weight-average molecular weight within a range of 1,000 3,000.
- 6. A cationic electropaint which comprises an amine-added epoxy resin obtained by addition reaction of amino-containing compound with epoxy resin or a xylene formaldehyde resin-modified, amino-containing epoxy resin as the main resin; and blocked polyisocyanate compound as the hardening agent, to which paint a polyaddition product as set forth in any one of Claims 1 5 is added at an optional stage of the paint formulation, at a ratio of 0.1 20 parts by weight per 100 parts by weight of combined solid compounds of the

main resin and the hardening agent.

- 7. A cationic electropaint comprising an advancedly formulated cationic electropaint to which 0.1-20 parts by weight of an aqueous dispersion of a polyaddition product as set forth in any one of Claims 1-5 is added per 100 parts by weight of combined solid components of the main resin and the hardening agent, said aqueous dispersion being prepared by adding an organic acid to the polyaddition product at a ratio within a range of 10-100 as converted to mgKOH per gram of solid component and dispersing it in water.
- 8. Coated articles which are electrocoated with a cationic electropaint as set forth in Claim 6 or 7.